E COLI by Modified m-TEC/ Membrane Filtration
HACH 8367 *(DOC316.53.001211)*

Facility Name:_____VELAP ID_____

Assessor Name:_____Analyst Name:_____Inspection Date_____

Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
Records Examined: SOP Number/ Revision/ Date _____ Analyst:_____					
Sample ID: _____ Date of Sample Preparation:_____ Date of Analysis:_____					
1) Are samples refrigerated at <10°C, treated with 0.0008% $Na_2S_2O_3$[5], and analyzed within 8 hours of collection?	40 CFR 136.3 Table 1I				
2) Are membrane filters, sterile, white grid marked, 47mm diameter, with 0.45µm pore size?	Page 4				
3) Are modified m-TEC 47mm prepared agar plates, HACH catalog number 2811815, used?	Page 4				
4) Are sample volumes chosen to produce 20 to 200 colony forming units (CFUs) per filter? *(Ideally, for wastewater, 20 to 80 CFUs.)*	Page 1				
5) Is the work bench disinfected with a germicidal cloth, dilute bleach solution, bactericidal spray, or dilute iodine solution, and are hands washed thoroughly with soap and water?	Page 1				
6) Is a membrane filter placed grid side up on the filtration apparatus using sterilized forceps?	Page 2				
7) When the sample is less than 20 mL (diluted or undiluted), is 10mL of sterile dilution water added to the filter funnel before applying vacuum?	Page 1				
8) Prior to filtration, is the sample inverted for 30 seconds to mix?	Page 2				
9) After the sample is filtered, are the funnel walls rinsed three times with 20 to 30mL of sterile buffered dilution water?	Page 2				
10) Is the vacuum released when the filter is dry to prevent damage to the filter?	Page 2				
11) Is the filter aseptically removed and rolled grid side up onto the agar plate to avoid trapping air under the filter?	Page 2				
Notes/ Comments:					

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12) Is the dish inverted and incubated at 35 ± 0.5˚C for 2 hours and then at 44.5 ± 0.2˚C for 22 hours?	Page 2				
13) After 22 hours, are number of red or magenta colonies counted using a 10 to 15X microscope? *(Red or magenta colonies confirm the presence of E. coli.)*	Page 2				
14) Is coliform density calculated using the following equation? *Coliform colonies/ 100 mL =* $\frac{\text{colonies counted x100}}{\text{mL sample filtered}}$	Page 3				
15) If growth covers the entire filtration area of the membrane, or a portion of it, and colonies are not discrete, are results reported as "Confluent Growth With or Without Coliforms"?	Page 3				
16) If the total number of colonies (coliforms plus non-coliforms) exceeds 200 per membrane or the colonies are too indistinct for accurate counting, are results reported as "Too Numerous to Count" (TNTC)?	Page 3				
17) For either situation above (#15 or #16), is a new sample run using a dilution that will give about 50 coliform colonies and not more than 200 colonies of all types?	Page 3				
18) For nonpotable water, if no filter meets the desired minimum colony count, is the average coliform density calculated? *Coliform colonies/ 100 mL=* $\frac{\text{Sum of colonies in all samples x 100}}{\text{Sum of volumes (mL) of all samples}}$	Page 3				
19) Recommendation: *Pseudomonas aeruginosa* is recommended as a negative control and *Escherichia coli* as a positive control.	Page 3				

Notes/Comments: